

was unable to locate their position. At 6 p.m. on March 4, when Hamilton Hill was experiencing the full force of an intense low pressure system situated off the lower west coast (W.A. Nat., 5: 133), a widely dispersed flock of about 100 Fork-tailed Swifts was seen moving against a strong north-westerly wind, at heights ranging between a few feet to about 100 feet from the ground. A small flock of about 70 swifts, flying towards the south-east, was seen at 7.20 a.m. on March 24. The birds were in close formation and were calling continuously.

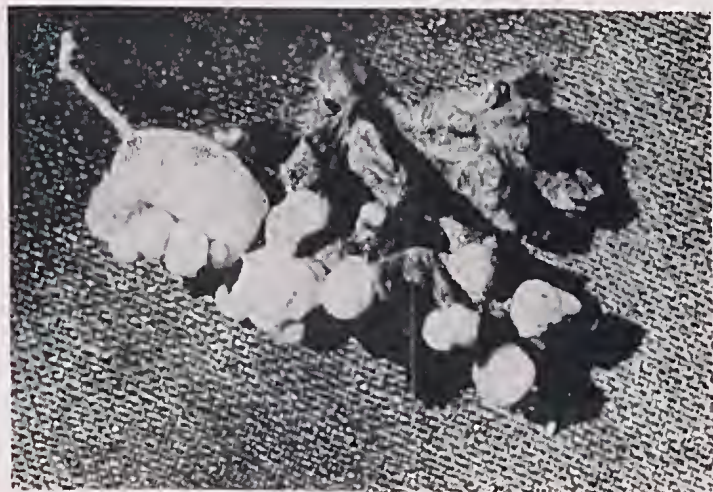
On March 18, 1956, at 7.30 p.m. near Bibra Lake, three swifts were seen flying towards the south. The weather was fine and no wind was in evidence.

—JULIAN R. FORD, Fremantle.

Note on a Parasitised Root Nodule.—This observation was made incidentally while examining native legumes for the presence of rhizobial (bacterial) nodules on their roots. It was made at Dinner Hill (west of Watheroo) on July 31, 1957, in sand plain scrub there occurring.

A root system of *Daviesia pectinata* Lindl. was exposed and found to be extensively nodulated with large coralloid nodules of *Rhizobium* sp. One such nodule was observed to be encircled by an haustorium (see figure), presumed that of the Christmas tree, *Nuytsia floribunda* Labill. (R. Br.), present in the locality and known to parasitise via haustoria (Herbert, D. A., *J. Proc. Roy. Soc. W.A.*, 5, 1920: 72-88). The maximum diameter of the haustorium was 11 mm.

This is an extreme of direct ecological interaction. Three plants (*D. pectinata*, *Rhizobium* sp., *N. floribunda*) are all in



Encirclement of one lobe of a root-nodule by a *Nuytsia* haustorium. The nodule was attached at its narrow end to a *Daviesia* root. The haustorium exhibits part of the strand by which it was connected to a *Nuytsia* root.

permanent anatomical contact and nutritional association. *Rhizobium* sp. and *D. pectinata* have entered reciprocal nutritive symbiosis, while the antagonism of the parasitic *N. floribunda* is imposed on the nodular manifestation of the primary association.

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Movements of Ringed Straw-necked Ibis in Western Australia.

—Some suggestive indications of the seasonal movement of the Straw-necked Ibis (*Threskiornis spinicollis*) in Western Australia are provided by three recoveries of birds which we ringed at the ibis rookery at Wallering Swamp, near Gingin on October 28, 1956. We ringed 197 young birds (as "runners") on that day, there being smaller young, as well as eggs, in nests at the same time. Three of the birds were recovered during the following twelve months.

The first bird (No. 120-01754) was found injured, 8 miles east of Carnarvon on January 7, 1957, by Mr. R. C. Nailard, of the Gascoyne Research Station. The second (120-01707) was found at Pindarra Pool, a permanent pool on the Yanrey River (a tributary of the Ashburton), in June, 1957, by an employee of Towera Station. The third bird (120-01798) was found in a dying condition at Leake Street, North Perth, in early October, 1957, by Mr. L. H. Needham.

These recoveries suggest that some at least of the young birds of the Wallering Lake colony leave the South-West and fly north immediately after fledging and may return south again by the following spring. The distance flown from Gingin to Carnarvon is approximately 500 miles direct, indicating a rather rapid post-breeding dispersal. Whether the adults also undergo a similar circuit must await further recoveries of ringed birds.

This demonstration of an exodus of immature birds from the South-West over a period which includes the winter months heightens interest in the origins of the birds which occur in winter in the south and whose numbers in some years may swell enormously. In his documentation of the 1952 irruption D. L. Serventy (*W.A. Nat.*, 3, 1953: 183) suggested the visitors were from northern Australia, driven south by unusually severe drought conditions there.

One of us (P.J.F.) visited Wallering Swamp on November 10, 1957, for a projected ringing programme but found that the ibis were not nesting at the swamp that season. No ibis at all were seen but several Nankeen Night Herons (*Nycticorax caldonicus*), which in previous years bred here in company with the ibis, were incubating eggs. The water level of the swamp was about 19 inches lower than it was at the corresponding time last year. The surrounding countryside was very dry. The annual rainfall at Gingin in 1957 was only 25.3 inches, compared with 29.4 inches in 1956, and the mean of 30.8 inches.

—P. J. FULLER and ERIC LINDGREN.